

## Role Ambiguity and Role Conflict at Work

The effects of role ambiguity and role conflict on occupational stress and job satisfaction, and the introduction of supervisor support and job crafting as moderators within these relationships

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This article was written under supervision of Yannick Griep and contains 6467 words. It was turned in on June 15<sup>th</sup>, 2020. The manuscript forms part of the requirements to obtain a Master of Science degree in Work, Organizational and Health Psychology at the Radboud University.

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## **Management Summary**

### **Research Problem**

In a German hospital, role ambiguity and role conflict were found to be quite high. Based on the current state of the art, the experience of ambiguity and conflict can have harmful consequences for organizations such as loss of productivity and quality of work. Moreover, it can also be harmful for individual outcomes such as job satisfaction and the experience of occupational stress. However, in order to remedy these negative effects, the literature clearly states that role ambiguity and conflict should be avoided. Based on this, I focused on the role of job crafting and supervisor support as moderators with the potential to buffer against the negative effects of role ambiguity and conflict.

### **Methods and Results**

121 respondents completed an online survey, distributed via personal connections of the researcher. This survey measured levels of experienced role ambiguity, role conflict, supervisor support, job crafting behavior, occupational stress and job satisfaction. The results indicated that role conflict had a significant positive relationship with occupational stress and a significant negative relationship with job satisfaction. Role ambiguity had no significant relationship with occupational stress, but the relationship with job satisfaction was significantly negative. No evidence was found for the assumption about the buffering effects of supervisor support and job crafting.

### **Interpretation and Practical Implications**

I found that employees who reported from role conflicts were also more stressed and less satisfied at their workplace. Therefore, it is valuable to counteract the effects of role conflict. Moreover, I found that employees who reported role ambiguity were less likely to experience job satisfaction, whereas their occupational stress levels remained unaffected. To sum up, employers should prevent role conflict (or at the very least aim to reduce it), if they want to reduce levels of occupational stress. However, if employers want to prevent a decrease in job satisfaction, they should focus on both preventing or reducing role conflicts and role ambiguity.

Because none of the introduced moderators show an effect in buffering the effects of role ambiguity and role conflict, I advise to encourage all parties involved in role conflicts and ambiguities to find, in a collaborative way, a solution for the effects of the ambiguities and conflicts. This approach can be facilitated by giving members of a company a workshop about role ambiguity and role conflict, focusing on how they are embedded within the social structure of that company.

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### **Abstract**

This study aimed to gain insight into (1) the direct relationship between role ambiguity, role conflict and occupational stress, as well as job satisfaction, and (2) the moderating role of supervisor support, and (3) job crafting between these relationships. In doing this, it was attempted to validate useful buffers for the effects of role ambiguity and conflict in the context of work. The hypotheses were tested by using a cross-sectional design including an online survey with a convenience sample. 121 employees were included within this study. Two multiple regression analyses were performed, revealing that role conflict had significant effects on occupational stress and job satisfaction. Role ambiguity had only a significant effect on job satisfaction. The moderation effects were all non-significant. Nevertheless, the study emphasizes the importance of counteracting against the negative effects of role ambiguity and conflict.

*Key words: role ambiguity, role conflict, supervisor support, job crafting, occupational stress, job satisfaction*

## Introduction

Occupational stress has received increasing research attention in recent years because of its detrimental effects on individual outcomes such as employee health (Gray, 1999) and well-being (Gulavani & Shinde, 2014), as well as on organizational outcomes such as higher error rates and more turnover intentions. Although occupational stress has received different definitions within literature, the National Institute for Occupational Safety and Health (NIOSH) and the International Labour Office agreed to define occupational stress “as the harmful physical and emotional response that occur when job requirements do not match or exceed a worker’s capabilities, resources, or needs” (Levy, Wegman, Baron, Sokas, & McStowe, 2018).

Especially within the context of healthcare, occupational stress has been found to contribute to turnover intentions (Shader, Broome, Broome, West, & Nash, 2001) and higher mortality rates (Tarnow-Mordi, Hau, Warden, & Shearer, 2000). Moreover, occupational stress can decrease the compassion, nurses experience for their patients, and this impacts the quality of treatment towards those patients (Harris, 2001; Laschinger & Leiter, 2006; Morgan, Semchuk, Stewart, & D’Arcy, 2002). In accordance with this, occupational stress has been found to diminish the quality of care within hospitals (Teng, Hsiao, & Chou, 2010). The described findings illustrate the importance of doing research and broadening knowledge on how to prevent occupational stress to avoid the problematic outcomes, particularly within the context of healthcare.

Literature (Levy et al., 2018) indicates that factors which increasing occupational stress can at the same time decrease job satisfaction. Job satisfaction, as defined by Armstrong (2006), deals with positive feelings and attitudes that employees possess toward their work. These positive feelings are critical for an organization because they have a positive effect on organizational outcomes (Spector, 2012) such as commitment and performance (Bakotić, 2016; Yoon & Thye, 2002). Not only is it reasonable to assume that the same antecedent can influence occupational stress and job satisfaction, researchers have additionally found that occupational stress and job satisfaction can result in the same negative outcomes for an organization. For example, turnover intentions were found to be positively related to high occupational stress, as well as to low job satisfaction (Mosadeghrad, 2013; Seccombe & Patch, 1995). Furthermore, Kula (2016) demonstrated that employees who experience high occupational stress and low job satisfaction are at high risk of suffering from burnout.

Consequently, I argue that high levels of occupational stress and low levels of job satisfaction are problematic and should be avoided. Because the findings of Mosadeghrad (2013), Kula (2016), Seccombe and Patch (1995) indicated that occupational stress, if high, as well as job satisfaction, if low, affect the same outcomes and can be especially harmful when combined. Therefore, the identification and prevention of work characteristics that effect both occupational stress (positively) and job satisfaction (negatively) are desirable and the focus of this research.

### **The Relationship between Role Ambiguity/Role Conflict and Occupational Stress and Job Satisfaction**

The literature already provides support for work characteristics which are harmful to employees' job satisfaction and their occupational stress level, namely role stress and role ambiguity. Employees must deal with instructions, requests, and information of different role senders, as described within Role Theory by Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964). In dealing with the requests of colleagues or supervisors, conflicts about various demands, as well as ambiguity and uncertainty about what is requested, can develop (Tucker, Jimmieson, & Jamieson, 2018). Role conflict and role ambiguity are often described as role stressors (Kemp, Kopp, & Kemp, 2013) or job demands (Bakker & Demerouti, 2007). Job demands, as described by Bakker and Demerouti (2007) within the framework of the Job Demand Resources model, refer to work characteristics which demand continuous effort and are linked to psychological expenses.

More precisely, a role conflict develops if somebody is confronted with several simultaneous requests or applications that cannot be aligned (Bode, Lindemann, & Wagner, 2011; Rizzo, House, & Lirtzman, 1970) or/and requested to execute two or more exclusive tasks (Kahn et al., 1964). In line with the described development of the conflict, role conflicts often appear within hospitals because a conflict between complying with safety issues and high work demands is likely to occur (Tyler & Cushway, 1995). Employees are in conflict as to which role to fulfil: Should they work as accurately as possible so safety issues are met, or should they work faster at the expense of those safety issues? Role ambiguity develops if expectations sent towards an employee are unclear (Singh, 1993) or if the employee is uncertain about what is asked from him/her (Rubino, Luksyte, Perry, & Volpone, 2009). Again, safety issues are found to contribute to a higher likelihood of role ambiguity (Tucker et al., 2018).

Because role ambiguity and role conflict, if not buffered, can demand continuous effort, I assume that they can be associated with the psychological costs of heightened

occupational stress and lowered job satisfaction. This assumption is supported by the findings of Hoppe, Heaney, and Fujishiro (2009), who demonstrated that role conflict is positively related to occupational stress, and Lobban, Husted, & Farawell (1998) who showed that role conflict is negatively related to job satisfaction. Moreover, Hoppe et al. (2009) found a positive relationship between role ambiguity and occupational stress and Lobban et al. (1998) found a negative relationship between role ambiguity and job satisfaction. To sum up, role ambiguity and role conflict were indicated to have unfavorable effects on occupational stress and job satisfaction. Therefore, I hypothesize the following:

**Hypothesis 1 (H1):** *There is a positive relationship between role conflict and occupational stress (H1a), and there is a positive relationship between role ambiguity and occupational stress (H1b)*

**Hypothesis 2 (H2):** *There is a negative relationship between role conflict and job satisfaction (H2a), and there is a negative relationship between role ambiguity and job satisfaction (H2b).*

### **The Moderating Role of Supervisor Support**

Because of the unfavorable downstream effects of occupational stress, this study investigates two moderators which I assume to be useful in counteracting the negative effects of role ambiguity/role conflict on occupational stress and job satisfaction, by using the theoretical assumptions of the Job Demand Resources model (Bakker & Demerouti, 2007).

The first moderator is supervisor support which has already received research attention within the context of occupational stress. Supervisor support, within this study, is operationalized by the support that employees receive from their supervisors so that only work-related social support is included (Seiger & Wiese, 2009). According to Yucel (2020) supervisor support can be considered as a job resource and is assumed to be one of the most important job resources in the case of nursing professions (Cortese, Colombo, & Ghislieri 2010; Pohl & Galleta, 2017). According to the Job Demand Resources model (Bakker & Demerouti, 2007), job resources, such as supervisor support, have the properties to buffer against the effects of job demands so that the negative effects of the job demands are reduced.

To understand the mechanism through which I assume supervisor support is moderating the effects of role conflict/role ambiguity on occupational stress and job satisfaction, the work of Hall (2007) and Hamaideh (2011) can be considered. Communicating with supervisors can evoke useful feedback and advice (Hall, 2007; Hamaideh, 2011) which can be used to handle the situation of role ambiguity and role conflict more adequately. That is, if a high amount of role ambiguity and stress is present, the

presence of job resources in the form of supervisor support can combat occupational stress more adaptively because these employees are provided with feedback and advice on how to handle the situation more successfully. This should result in a lower degree of occupational stress. Moreover, negative thoughts and feelings caused by role ambiguity and conflict can be shared with supervisors if the necessary support is present (Hall, 2007; Hamaideh, 2011). In the described case, the situation is evaluated in more positive terms which foster positive emotions and job satisfaction (Moneke & Umeh, 2013). In line with that reasoning, previous studies found support for the buffering effect of job resources on the relationship between job demands and well-being (Bakker, Demerouti, & Euwema, 2005; Hughes & Parkes, 2007; Stiglbauer, 2016). Occupational stress and job satisfaction can be considered as a negative and positive indicator of employees' well-being, respectively. Moreover, supervisor support was found to decrease occupational stress and increase the commitment of employees towards their workplace (Abualrub, 2004; Mrayyan, 2009) which is associated with job satisfaction. Consequently, I hypothesize the following:

**Hypothesis 3 (H3):** *The positive relationship between role conflict and occupational stress (H3a) and between role ambiguity and occupational stress (H3b) is moderated by supervisor support, such that the relationship is weaker when employees report high levels of supervisor support.*

**Hypothesis 4 (H4):** *The negative relationship between role conflict and job satisfaction (H4a) and between role ambiguity and job satisfaction (H4b) is moderated by supervisor support, such that the relationship is weaker when employees report high levels of supervisor support.*

### **The Moderating Role of Job Crafting**

In addition, I also introduce the moderating role of job crafting because I propose that role ambiguity and role conflict affect occupational stress and job satisfaction especially within a context of insufficiently defined roles. This is in line with the assumptions made by Kahn et al. (1964), who stresses the importance of well-defined roles to prevent influences of role ambiguity and conflict. Roles are a social construct that entail what is expected of a specific position (Ilgen & Hollenbeck, 1991). A lack of clearly defined roles increases the likelihood that employees experience the negative consequences of role ambiguity and role conflict on occupational stress and job satisfaction; they cannot check if expectations are legitimate in the case that their role is not well defined, thus they cannot counteract against the negative effects. Job crafting can contribute to a good definition of roles (Sluss, Dick, & Thompson, 2011; Tepper, Lockhart, & Hoobler, 2001).



Wrzesniewskie and Dutton (2001) divided job crafting into three forms, namely task crafting, relational crafting, and cognitive crafting. Task crafting describes the situation in which employees adjust the amount or type of activities that they must carry out. Relational Crafting describes the situation in which employees try to connect with people of similar interests or decide with whom to interact. Cognitive crafting is not within the scope of this research, because it can be contrasted from the two other forms in that it only affects the perception of employees on a current situation instead of actually changing the circumstances as done by task- and relational crafting (Wrzesniewskie and Dutton, 2001). Moreover, it can be assumed that task crafting and relational crafting are influenced by organizational aspects of the work, such that an organization can influence those aspects of job crafting by easing possibilities for task and relational crafting. In contrast, cognitive crafting depends more on the individual and his coping behavior, making it harder for an organization to change this aspect of job crafting.

In line with the Job Demand Resources model (Bakker & Demerouti, 2007), I argue that job crafting, as a resource, can buffer the positive effect of role stress on occupational stress and the negative effect of role stress on job satisfaction. That is, I assume that job crafting buffers these detrimental consequences. By engaging in task and relational crafting, employees are more capable of fulfilling the responsibilities of their designated role instead of struggling with conflict and ambiguity. The fulfilment of working roles and the attributed goals of this role is key to job satisfaction, as stated by Sander and Scherer (2009). Additionally, the resources gained through job crafting provide employees with a context in which they are better able to act according to their preferences, which increases job satisfaction (Tims, Bakker, & Derks, 2013) and should buffer the negative effects that role ambiguity and conflict have on the employees' chance to act according to their preferences.

Additionally, occupational stress should decrease when employees engage in task crafting because requirements caused by too many roles that exceed the capabilities of the employees can be adjusted within the context of task crafting, and result in a better functioning of the employees (Leana, Appelbaum, & Sheychuk, 2009), and in turn, less stressed employees. Furthermore, by engaging in relational crafting employees aim to increase their social job resources, like supervisor support (Tims & Bakker, 2010), which I assume to equip them to deal more efficiently with the effects of role ambiguity and role conflict. Consequently, relational crafting can provide a context in which buffering effects against role ambiguity and conflict through supervisor support are more likely. If employees engage in relational crafting, and therefore have more valuable connections with supervisors,

the chance that role stressors are buffered because of the relations that were built up, should be higher. Thus, I hypothesize the following:

**Hypothesis 5 (H5):** *The positive relationship between role conflict and occupational stress (H5a) and between role ambiguity and occupational stress (H5b) is moderated by job crafting, such that the relationship is weaker when employees report high levels of job crafting.*

**Hypothesis 6 (H6):** *The negative relationship between role conflict and job satisfaction (H6a) and between role ambiguity and job satisfaction (H6b) is moderated by job crafting, such that the relationship is weaker when employees report high levels of job crafting.*

## Method

### Procedure

I distributed a cross-sectional survey containing the in the material section described measurements that was administered via Qualtrics, a system that supports the distribution of surveys. In total, the study was online for 33 days. I used a convenience sample and approached respondents via personal connections of friends and family members who were working and had a supervisor. Each respondent received a link to the survey via mobile phone or email. Upon clicking the link, respondents were displayed the study description, followed by a consent form which needed to be signed before progressing with the study. Respondents could decide by themselves where and when to conduct the study and how much time they needed. The received data were stored within Qualtrics and after finishing the study imported into SPSS for data-analysis.

### Participants

In total, 151 employees of various occupations voluntarily participated within this study. 30 of them were excluded, since although they filled in the consent form, they did not answer any questions. Therefore, 121 participants were included in data-analyzation, resulting in a response rate of 80%. G\*Power3 (Faul, Erdfelder, Lang, & Buchner, 2007) was used for conducting an a priori power analysis to test the linear multiple regression models using a F test, a small effect size ( $d = .15$ ), and an alpha of .025. To achieve a power of .95 a total of 147 participants was needed. Therefore, the study is underpowered.

No demographic information about the participants were collected, because participants consisted of my personnel connections of which I know most demographical data and asking about these data could have violated anonymity of participants.

## Materials

The survey (see Appendix A) is a collection of validated measurements and consists of 39 items. Because some measures were not available in German, I used a process of back-forth translation to translate the original English items into German (see Appendix B for original and translated items). First, two native German translators familiar with the English-speaking culture and the terminology covered by the items translated items from English into German. Second, a bilingual expert of the German and English language compared the two translations and decided which translations were more accurate, if differences were noticed. Third, another bilingual expert of the German and English language translated the items back into English. The original English items and the back and forth translated English items were compared and if differences were noticed an agreement between all involved translators were made on how to improve the translation. Furthermore, for each scale Cronbach's alpha was computed to assess internal consistency. Different definitions for an acceptable Cronbach's alpha exist, but values of Cronbach's alpha are mostly defined as being acceptable if they range from 0.70 to 0.95. (Tavakol & Dennick, 2011).

**Role ambiguity.** Role ambiguity was measured with the subscale role ambiguity, developed by Rizzo and colleagues (1970) and validated by Kelloway and Barling (1990). The subscale entails five items (see Appendix B, Table B1) and has a Cronbach's alpha of .80 (Kelloway & Barling, 1990). Within this study, Cronbach's alpha of the scale was .75. Respondents were asked to evaluate the accuracy of different statements which must be answered on a 5-point scale, ranging from 1 "completely true" to 5 "completely false". Examples items were "I know what my responsibilities are" and "Clear, planned goals and objectives exist for my job". I computed an overall mean score for role ambiguity. Within the original scale, high scores are indicating a low degree of role ambiguity. To be consistent with the meaning of the other scales used within this research and to make the results more intuitive, I reversed the total score for role ambiguity such that a high score indicates the experience of high role ambiguity.

**Role conflict.** Role conflict was also measured with a subscale developed by Rizzo and colleagues (1970) and validated by Kelloway and Barling (1990) who identified two items within the role conflict scale that have a relative low factor loading. Consequently, these two items were excluded. The subscale has six items (see Appendix B, Table B2) and answer options range from 1 "completely true" to 5 "completely false". Example items were "I work with two or more groups who operate quite differently" and "I receive incompatible requests from two or more people". Within this study, Cronbach's alpha was .68. I computed

an overall mean score for role conflict. A high score indicates the experience of high role conflict.

**Job satisfaction.** Job satisfaction was measured by a scale used by Bacharach and Mitchell (1982) and Conley, Bacharach and Bauer (1988) which entails five items (see Appendix B, Table B3). Answer options range from 1 “very dissatisfied” to 4 “very satisfied”. The scale was validated by Bacharach, Bamberger and Conley (1991) who used two different samples, one consisting of nurses (Cronbach’s alpha: .90) and one consisting of engineers (Cronbach’s alpha: .88). For this study, the scale achieved a Cronbach’s alpha of .85. Respondents were asked to identify how satisfied they are followed by statements like “The chances your job gives you to do what you are best at”. I computed an overall mean score for job satisfaction. A high score indicates high job satisfaction.

**Job crafting.** Job Crafting was measured by using two subscales of the job crafting questionnaire developed by Slemp and Vella-Drodrick (2013), namely task crafting and relational crafting (see Appendix B, Table B4). The scale for cognitive crafting was excluded within this research because this subscale measures perception instead of action (Slemp & Vella-Drodrick, 2013), and the scope of this research is how active job crafting behavior as task crafting and relational crafting can be helpful as a buffer within the described relationships. Respondents had to indicate to which degree they engage in the described behaviors by using a scale that ranges from 1 “hardly ever” to 6 “very often”. The scale for task crafting included seven items and had a Cronbach’s alpha of .87. Example questions of these items are: “Introduce new approaches to improve your work” and “Choose to take on additional task at work”. The scale for relational crafting also included seven items and had a Cronbach’s alpha of .83. Example questions of this items are: “Organise or attend work related social functions” and “Make an effort to get to know people well at work”. I computed an overall mean score for job crafting. Because job crafting consisted of two subscales, I performed a confirmatory factor analysis to validate the one factor solution. The received factor loading revealed that all items load more than .41 on one factor, which validated the one factor solution. Moreover, Cronbach’s alpha was .83 for the combination of the two subscales within this study. Higher scores are indicating more engagement in job crafting of an employee.

**Supervisor support.** Supervisor support was measured with the by Yucel and Minnotte (2016) developed subscale to measure supervisor support (Cronbach’s alpha: 0.85). For this study, the scale achieved a Cronbach’s alpha of .86. Four items (see Appendix B, Table B5) were included within the scale, which measured the level of perceived

responsiveness, understanding and comfort while dealing with supervisors. The answer option for each item ranged from 1 “strongly agree” to 4 “strongly disagree”. I computed an overall mean score for supervisor support. High scores are indicating a high degree of supervisor support at work.

**Occupational stress.** Occupational stress was measured by a single item developed by Van Laethem et al. (2015) and inspired by the single item of Elo, Leppänen and Jahkola (2003). The item is “How much stress do you generally experience due to your work?”. Answers can be ranged from 1 “no stress at all” to 10 “very much stress”. The item was especially suitable for this research because I aimed to have an indication of general work stress contrasted to situational work stress.

### **Data Analysis**

I performed all analyses by using SPSS 26.0 (IBM SPSS Statistics for Windows, Version 26.0) and defined statistical significance as  $p < .025$  because I conducted two separate analyses for the dependent variables occupational stress and job satisfaction, such that I had to correct for chance capitalization.

First, I executed descriptive statistics to evaluate means, standard deviation, the actual range, and skewness for the research variables. In addition, I performed a reliability analysis to validate that the translated scales are also valid within a German population by using Cronbach’s alpha, reported within the method section. Second, I calculated Pearson correlations between the research variables. To test the hypotheses about moderation (H3, H4, H5 and H6), I used standardized scores of each independent variable and I created interaction terms by multiplying standardized scores of role ambiguity with standardized scores of supervisor support and job crafting, as well as by multiplying standardized scores of role conflict with standardized scores of supervisor support and job crafting. Moderators were not centered. I tested hypotheses H1, H3 and H5 by performing a multiple regression analysis. Occupational stress was used as dependent variable within this model. Role conflict (H1a) and role ambiguity (H1b), together with the two moderators social support and job crafting and the interaction terms role conflict  $\times$  supervisor support (H3a), role ambiguity  $\times$  supervisor support (H3b), role conflict  $\times$  job crafting (H5a) and role ambiguity  $\times$  job crafting (H5b) were used as independent variables. I tested hypotheses H2, H4 and H6 using another multiple regression analysis. Job satisfaction was used as dependent variable within this model. Role conflict (H2a) and role ambiguity (H2b), together with the two moderators social support and job crafting and the interaction terms role conflict  $\times$  supervisor support (H4a),

role ambiguity × supervisor support (H4b), role conflict × job crafting (H6a) and role ambiguity × job crafting (H6b) were used as independent variables.

## Results

### Descriptive Statistics

Within Table 1, I present the bivariate correlations, means and standard deviations for the study variables. Following the criteria of Cohen (1992), correlations between .10 and .29 are interpreted as small, between .30 and .49 as medium, and above .50 as large. The positive correlation between role conflict and occupational stress was significant and small ( $r = .29, p = .001$ ); higher role conflict scores are associated with higher occupational stress. However, the correlation between role ambiguity and occupational stress was not significant; higher role ambiguity scores were not associated with higher occupational stress. The negative correlation between role conflict and job satisfaction was significant and medium ( $r = -.31, p = < .001$ ) and the negative correlation between role ambiguity and job satisfaction was significant and medium ( $r = -.39, p = < .001$ ). Higher role conflict scores were associated with less job satisfaction and higher role ambiguity scores were associated with less job satisfaction.

Participants indicated to experience low levels of role ambiguity, compared to the findings of other studies which used the same scale for the measurement of role ambiguity (Rosenkrantz, Luthans, & Hennessey, 1983; Tunc & Kutanis, 2009), which was also displayed in the potential- (1.0-5.0) and actual range (1.0-4.0) for the scale of role ambiguity (see Appendix C, Table C1 for the actual and potential range of all study variables). The actual range of the scale of role conflict was also 1.0-4.0, whereas the scale potential ranged from 1.0-5.0. Nevertheless, the skewness of the scales used to measure the research variables ranged from 0,17 to 0,81, so no violation of normal distribution could be detected.

Table 1

*Summary of intercorrelations, Means, and Standard Deviations for Scores on role ambiguity, role conflict, supervisor support, job crafting, occupational stress, and job satisfaction*

Measure	M	SD	1	2	3	4	5	6
1. Role Ambiguity	2.04	.69	—	.36**	-.19*	-.19*	-.10	-.39**
2. Role Conflict	2.32	.66		—	-.22*	.17	.29**	-.31**
3. Support Supervisor	2.87	.73			—	.34**	-.11	.49**
4. Job Crafting	3.70	.78				—	.30**	.37**
5. Occupational Stress	5.86	2.29					—	-.06
6. Job Satisfaction	2.92	.64						—

Note. Pearson correlations are displayed between study variables. High values on a construct are revealing a more extreme responding towards the assessed construct, valid for each scale.

\* $p < .05$ . \*\* $< .01$ .

### **Assumptions Testing**

Prior to presenting my results, I tested the underlying assumptions of the conducted multiple regression analysis. First, I determined if no multicollinearity within the research data is present, meaning that the independent variables are not too highly correlated with one another. None of the dependent variables correlated higher than .04 with each other (see Table 1), so no issues with multicollinearity are assumable (Tabachnick & Fidell, 2007). Moreover, by performing collinearity diagnostics I observed that all VIF scores of each study variable were well below 10 and tolerance scores were all above 0.7 (see Appendix D, Table D1), indicating in a more formally manner that the variables were not too high correlated. Second, I performed a Durbin-Watson statistic to assess whether the individual data points were independent from one another. The value should be as close to two as possible (Kenton, 2020). For the model of occupational stress, the Durbin-Watson value was 1.81. For the model of job satisfaction, the Durbin-Watson value was 1,711. Third, to test the assumption of homoscedasticity, I plotted standardized values predicted by the two models against the standardized residuals. The variations in the residuals are roughly the same for each model (see Appendix D, Figure D1 and Figure D2), meaning that homoscedasticity was present within both models. Fourth, to determine if the values of the residuals are normally distributed, I visually inspected the P-Plot for each model. Although, I detected some slightly violations for the model of occupational stress and job satisfaction (see Appendix D, Figure D3 and Figure D4), most data points touch the line, meaning that the residuals are roughly normal distributed. Finally, to determine the presence of influential cases, I used Cook's distance values. No values were above one, indicating that no significant outliers were present within the data set, which made it possible to include all 121 cases within both analyses.

### **Hypotheses Testing**

First, I performed a multiple regression analysis with the entre method to assess whether role conflict and role ambiguity predicted occupational stress (H1), and to examine whether supervisor support (H3) and job crafting (H5) moderated this relationship. The model predicted occupational stress significantly ( $F(8, 112) = 3.87, p = < .001, R^2 = .21$ ). The coefficient for each independent variable in relation to occupational stress are displayed in

Table 2. Role conflict significantly predicted occupational stress,  $b = .29, p = .01$ ; supporting H1a. However, role ambiguity did not significantly predict occupational stress; not supporting H1b.

None of the moderation effects approached significance. Therefore, no support for the hypothesis about the moderating effects of supervisor support, namely H3, and the moderating effects of job crafting, namely H5, were found. Job crafting significantly predicted occupational stress ( $b = .31, p < .001$ ), more job crafting behavior was associated with more experience of occupational stress.

Table 2

*Coefficients of Multiple Regression Analysis for Predicting Occupational Stress*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	5.93	.21		28.39	.00
Role Ambiguity	-.35	.22	-.15	-1.60	.11
Role Conflict	.65	.23	.29	2.88	.01
Supervisor Support	-.47	.22	-.21	-2.15	.03
Job Crafting	.71	.22	.31	3.19	.00
Role Ambiguity × Supervisor Support	-.17	.20	-.08	-0.84	.40
Role Conflict × Supervisor Support	.22	.20	.11	1.12	.23
Role Ambiguity × Job Crafting	.03	.21	.01	0.13	.90
Role Conflict × Job Crafting	.04	.22	.02	0.20	.84

*Note.* Coefficients of multiple regression analysis. Dependent variable: occupational stress. Independent variables: role ambiguity, role conflict, supervisor support, job crafting, and the interaction terms (role ambiguity × supervisor support, role conflict × supervisor support, role ambiguity × job crafting, and role conflict × job crafting).

I performed another multiple regression analysis with the entre method to assess whether role ambiguity and role conflict predicted job satisfaction, and to examine whether supervisor support and job crafting moderated this relationship. The model predicted job satisfaction significantly ( $F(8, 112) = 10.10, p < .001, R^2 = .42$ ). The coefficient for each independent variable in relation to job satisfaction are displayed in Table 3. Role conflict ( $b = -.21, p = .02$ ) and role ambiguity ( $b = -.21, p = .01$ ) both have a significant negative



relationship with job satisfaction; supporting H2a and H2b, respectively. However, none of the moderation effect reached significance. Therefore, no support for the hypotheses about the moderating effects of supervisor support, namely H4, and the moderating effects of job crafting, namely H6, were found. Supervisor support ( $b = .31, p = < .001$ ) and job crafting ( $b = .25, p = < .001$ ) both had a significant positive association with job satisfaction; more supervisor support and more job crafting were positively associated with more job satisfaction.

Table 3

*Coefficients of Multiple Regression Analysis for Predicting Job Satisfaction*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	2.96	.05		59.11	.00
Role Ambiguity	-.13	.05	-.21	-2.55	.01
Role Conflict	-.13	.05	-.21	-2.45	.02
Supervisor Support	.20	.05	.31	3.74	.00
Job Crafting	.16	.05	.25	2.97	.00
Role Ambiguity × Supervisor Support	.03	.05	.04	.55	.59
Role Conflict × Supervisor Support	.04	.05	.07	.85	.40
Role Ambiguity × Job Crafting	-.07	.05	-.11	-1.40	.16
Role Conflict × Job Crafting	-.10	.05	-.16	-1.91	.06

*Note.* Coefficients of multiple regression analysis. Dependent variable: job satisfaction. Independent variables: role ambiguity, role conflict, supervisor support, job crafting, and the interaction terms (role ambiguity × supervisor support, role conflict × supervisor support, role ambiguity × job crafting, and role conflict × job crafting).

### Discussion

The aim of the study was to investigate whether role ambiguity and conflict are associated with heightened occupational stress and lowered job satisfaction. In line with the findings of Lobban et al. (1998) and my hypotheses, I discovered that role- conflict and ambiguity had a negative relationship with job satisfaction. Moreover, and in line with what was found by Hoppe et al. (2009), role conflict had a positive relationship with occupational stress, but in contrast to the findings of Hoppe et al., I found no significant relationship between role ambiguity and occupational stress. The listed significant results are empirical

support for the Job Demand Resources model (Bakker & Demerouti, 2007), which proposes that job demands like role ambiguity and role conflict result in psychological costs, like heightened occupational stress and lowered job satisfaction. In contrast to the model, the relationship of role ambiguity and occupational stress was not significant.

The absence of a significant relationship between role ambiguity and occupational stress could be explained by the low degree of role ambiguity within this sample; compared to other studies (e.g., Rosenkrantz et al., 1983; Tunc & Kutanis, 2009) which used the same role ambiguity scale, respondents in this study reported low degrees of role ambiguity. It could be that low(er) levels of role ambiguity are not at all perceived as demanding and therefore have no effect on occupational stress. This reasoning also captures the theoretical tenets of the Job Demand Resources model, which states that job demands must require continuous effort to result in psychological costs (Bakker & Demerouti, 2007). If a low level of role ambiguity is present, it can be assumed that employees do not need to display continuous effort in order to deal with the low level of role ambiguity. Consequently, it can be assumed that occupational stress is not affected under said levels of ambiguity.

Next, this study examined if supervisor support could potentially act as a buffer on the relationship between role conflict and role ambiguity, and occupational stress and job satisfaction. I found no support for any of these moderating effects. A possible explanation for the lack of significant results could be that the support of supervisors is not that helpful in the situation of conflict and ambiguity as initially assumed. Role conflicts and ambiguities are embedded within the social structure of the employee's workplace (Ilgen & Hollenbeck, 1991), as such, not only supervisors are involved, but every member of the workplace is involved. The effects of conflict and ambiguity could be manifested more in the context of working with colleagues. Within this context, it could be hard for supervisors to display support because they are not directly involved. Therefore, it would be useful to include support of colleagues in future research and to make a distinction between supervisor support and support of colleagues so that it could be investigated as to whether there is a difference between both types of support in buffering effects of ambiguity and conflict.

Moreover, I studied the moderating role of job crafting on the relationship between role conflict and role ambiguity, and occupational stress and job satisfaction. I was unable to find any support for the moderating role of job crafting. Combined, these findings are not in line with the theoretical assumptions made in the Job Demand Resources model (Bakker & Demerouti, 2007). The effects of the job demands (role- ambiguity and conflict) were not moderated by the job resources (supervisor support and job crafting).

A theoretical explanation for the findings that supervisor support and job crafting did not buffer against the effects of ambiguity and conflict could be that role conflicts and role ambiguity are not necessarily perceived as job demands, according to the framework of the Job Demand Resources model (Bakker & Demerouti, 2007) at low and medium levels. It could be that, even though role ambiguity and role conflict is experienced by employees, a cut-off score of how much they are experienced must be met, before counting as demanding, and that this cut-off score is quite high. It could be that if this cut-off score of ambiguity and conflict is not met, the employee does not profit from supervisor support or job crafting behavior for counteracting against the effects of ambiguity and conflict because these effects were not really explicitly experienced by the employee. This explanation is supported by the work done by Ebbers and Wijnberg (2017), who found that in some situations role conflict and role ambiguity can be welcomed by employees because maladaptive work processes are underlined and can be resolved and no demanding responses are therefore necessary. If this assumption holds true, a research design which includes only participants scoring in the highest quarter of role- conflict and ambiguity would be valuable, in detecting possible moderation effects of supervisor support and job crafting.

### **Study Limitations**

Participants within this study sample indicated to experience only low levels of role ambiguity, compared to other studies which used the same scale (Rosenkrantz et al., 1983; Tunc & Kutanis, 2009). This contrast can be due to the fact that I used a convenience sample. A possible confounding effect of this convenience sample could be that participants who experienced only low degrees of role ambiguity were much more willing to participate in this study because they were not confronted with feelings of ambiguity towards their work. Conversely, employees who experienced high amounts of role ambiguity could have perhaps avoided filling in the questionnaire. This assumption was supported by the high percentage of participants who did not fill in the questionnaire after consenting and seeing the questions. They may have simply not been interested in being confronted by their role ambiguities, and as a result, stopped answering the questionnaire.

Another explanation that participants indicated to experience only low degrees of role ambiguity could be caused by social desirability, although the questionnaire was anonymous. The scale to measure role ambiguity includes questions like “I know what my responsibilities are”. Indicating that one does not know his/her responsibilities can demand a high degree of forthrightness, which not everybody may have fulfilled. A social desirability scale could be included in future research to control for the described assumed confounding effect.

Moreover, because I used a small convenience sample and approached respondents via personal connections, it could be that the sample was too homogeneous. Consequently, the study sample is possibly not as representative as desired. Spector (1987) also states that if no much variance in the independent variable is obtained (i.e. role ambiguity), and a small sample size is used (for this study  $n$  was 121), the likelihood of finding any significant effect is lower due to a limited variation of the outcome variable (i.e. occupational stress). A more diverse research population regarding the experience of role ambiguity would have been more helpful in detecting possible effects of role ambiguity on occupational stress.

Additionally, it should be noted that the scale for role ambiguity only possessed an alpha of .68 within this study, whereas an acceptable range for alpha is mostly defined from .70 to .95 (Tavakol & Dennick, 2011). The scale was translated from English into German; therefore, it could be assumed that some validity of the scale was lost in translation. Consequently, all results on role ambiguity could possibly be influenced due to the loss in validity for this scale.

### **Practical Implications and Recommendations**

The findings of this research indicate that role conflict and role ambiguity are both unfavorable work characteristics with regard to job satisfaction. Job satisfaction was found to be critical within the work environment of hospitals (Bakotić, 2016; Yoon & Thye, 2002) to reach good work outcomes. Therefore, the experience of role conflicts and ambiguities by employees should be reduced and aimed by employers to provide an environment in which good work outcomes are obtained, especially within hospitals. In doing so, employers should communicate to employees that role conflict and role ambiguity are associated with lessened job satisfaction and heightened occupational stress, so that employees are motivated to facilitate the resolving of the conflicts.

As evident from the obtained results, neither supervisor support nor job crafting were helpful in counteracting the effects of role ambiguity and role conflict. Supervisor support, as well as job crafting, happen on an individual basis. Because role ambiguity and conflicts are embedded within a social structure, companies may profit more by using a broader, organizational wide approach to capture the effects of ambiguity and conflict. More specifically, companies should encourage supervisors and subordinates to collaborate in groups to find solutions for effects of ambiguities and conflicts. Furthermore, as indicated by Ebbers and Wijnberg (2017), by resolving the effects of ambiguity and conflict within collaboration, work processes can possibly be improved, resulting in an efficient strategy for work productivity and work satisfaction. This approach can be combined with workshops for

supervisors and subordinates, intended to increase awareness for the impact that role conflicts and ambiguities can have and how they are braided within the social structure of a given company. Mutual understanding of why and how conflicts and ambiguities are present should help to resolve the effects of these conflicts and ambiguities because each party has more insight of how the conflict and ambiguity is manifested within their social structure, facilitating more dialogs instead of discussions between the involved parties (Altorf, 2016).

### **Conclusion**

To conclude, this study highlights the importance of preventing the negative effects of role conflict on occupational stress and job satisfaction, and of role ambiguity on job satisfaction. Employers should provide a work environment which facilitates a dialog between the parties that have conflicts and ambiguities in order to capture and prevent the negative effects.

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**Appendix A**

Survey of the Study, as Exported from Qualtrics into Word

Sehr geehrte Damen und Herren,

vielen Dank, dass Sie sich die Zeit nehmen, an meiner Studie teilzunehmen. Die Studie beinhaltet das Ausfüllen einer Fragenliste. Die Ergebnisse werde ich verwenden, um meine Masterarbeit im Bereich Arbeits- und Organisationspsychologie zu schreiben. Des Weiteren werden durch das Beantworten der Fragenliste wichtige Informationen in Bezug auf Rollenkonflikte, Arbeitsstress, Arbeitszufriedenheit, soziale Unterstützung und Arbeitsanpassung evaluiert, anhand derer Arbeitsbedingungen verbessert werden können. Daher würde ich mich sehr freuen, wenn Sie die Fragen vollständig und wahrheitsgemäß beantworten würden.

Ihre Antworten werden vollständig anonym behandelt und es sind keine Fragen vorhanden, die zu einer Identifikation Ihrer Person führen könnten. Daher ist kein Rückschluss auf Ihre Person möglich. Die Teilnahme an dieser Studie ist freiwillig und Sie haben jederzeit das Recht, die Studie abzubrechen, ohne dafür eine Begründung angeben zu müssen. Zur Ausfüllung des Fragebogens werden ungefähr 10 Minuten benötigt. Bei Fragen oder Anmerkungen zu dieser Untersuchung können Sie gerne mit mir Kontakt aufnehmen, unter [c.ludwig@student.ru.nl](mailto:c.ludwig@student.ru.nl).

Vielen Dank für Ihre Teilnahme,

Christoph Ludwig

Ich bestätige, dass ich einverstanden bin, an der Studie teilzunehmen und dass meine Daten als Teil einer Masterarbeit auf anonymisierter Weise bearbeitet werden.

- ja
- nein

*Der erste Teil des Fragebogens bezieht sich auf das Erfahren von Rollenstress innerhalb ihres Arbeitsplatzes. Bitte geben Sie auf einer Skala von 1 bis 5 an, inwiefern die Aussagen auf Sie zutreffen.*

*Die Zahlen haben folgende Bedeutungen: 1= nie, 2= selten, 3= manchmal, 4=eher häufig, 5=fast die ganze Zeit*

	1 (nie)	2(selten)	3 (manchmal)	4 (eher häufig)	5 (fast die ganze Zeit)
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<p>1. Ich erhalte eine Aufgabe ohne die Arbeitskraft/Möglichkeit, sie zu bewerkstelligen.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>2. Ich arbeite mit zwei oder mehr Gruppen, die ziemlich unterschiedliche Arbeitsweisen haben.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>3. Ich muss eine Regel oder eine Richtlinie missachten, um eine Aufgabe auszuführen.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>4. Ich erhalte nicht miteinander zu vereinbarende Forderungen von zwei oder mehr Menschen.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>5. Ich tue Dinge, die darauf gezielt sind, von einer Person akzeptiert zu werden, aber nicht von den Anderen akzeptiert werden.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>6. Ich erhalte eine Aufgabe, ohne die angemessenen Hilfsmittel und Materialien, um sie auszuführen.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>7. Ich fühle mich sicher in Bezug darauf, wie viel Autorität ich besitze.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>8. Eindeutige, geplante Zielsetzungen und Ziele existieren für meinen Beruf.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>9. Ich weiß, was meine Verantwortlichkeiten sind.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>10. Ich weiß genau, was von mir erwartet wird.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>11. Die Erklärung, was getan werden muss, ist eindeutig.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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22. Organisation von speziellen Ereignissen an Ihrem Arbeitsplatz (z.B. das Feiern des Geburtstages eines Mitarbeiters).

23. Sich selber Mitarbeitern, Kunden oder Klienten vorstellen, die Sie kennen lernen müssen.

24. Entscheidung, neue Angestellten einzuweisen (offiziell oder inoffiziell).

25. Anfreunden mit Menschen auf der Arbeit, die ähnliche Fähigkeiten oder Interessen haben.

Der nächste Teil beinhaltet Fragen zu Ihrer allgemeinen Arbeitszufriedenheit. Bitte geben Sie auf einer Skala von 1 bis 4 an, wie zufrieden Sie mit den Angaben der folgenden Aussagen sind: 1= sehr unzufrieden, 2= unzufrieden, 3= zufrieden, 4= sehr zufrieden

	1 (sehr unzufrieden)	2 (unzufrieden)	3 (zufrieden)	4 (sehr zufrieden)
26. Ihr aktueller Beruf, wenn Sie ihn mit Berufen in anderen Organisationen vergleichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Der Fortschritt den Sie machen, in Bezug auf Ihre Ziele, die Sie sich selbst für Ihre aktuelle Position stellen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Die Chancen, die Ihr Beruf Ihnen gibt, um auszuüben, was Sie am besten können.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Ihr aktueller Beruf, wenn Sie die Erwartungen berücksichtigen, die Sie hatten, als Sie Ihren Beruf angenommen haben.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Ihr aktueller Beruf im Hinblick auf Ihre Karriereerwartungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Die folgenden Fragen sind darauf gerichtet, wie Sie die Unterstützung durch Kollegen und Vorgesetzte innerhalb Ihres Arbeitsplatzes erfahren. Bitte geben Sie auf einer Skala von 1 bis 4 an, wie Sie den folgenden Aussagen zustimmen: 1= nein, 2= eher nein, 3= eher ja, 4= ja

	1 (nein)	2 (eher nein)	3 (eher ja)	4 (ja)
31. Ich erhalte die Unterstützung von meinen Mitarbeitern, die ich benötige, um eine gute Arbeit zu leisten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



32. Ich habe das Gefühl, dass ich wirklich Teil der Gruppe von Menschen bin, mit der ich arbeite.

33. Ich erhalte Unterstützung von meinen Mitarbeitern, die mir hilft, mein arbeits-, persönliches oder familiäres Leben zu bewältigen.

34. Mein Vorgesetzter oder Manager geht auf meine Bedürfnisse ein, wenn ich familiäre oder persönliche Angelegenheiten zu erledigen habe (zum Beispiel: ärztliche Absprachen, Treffen mit den Lehrern des Kindes, usw.).

35. Mein Vorgesetzter oder Manager zeigt Verständnis, wenn ich über persönliche oder familiäre Angelegenheiten spreche, die meine Arbeit beeinflussen.

36. Ich fühle mich wohl, persönliche oder familiäre Angelegenheiten vor meinem Vorgesetzten oder Manager anzusprechen.

37. Mein Vorgesetzter oder Manager kümmert sich wirklich um die Auswirkungen, die die Arbeitsanforderungen an mein persönliches oder familiäres Leben aufweisen.

Die nachfolgende Frage beschäftigt sich damit, in welchem Maße Sie Stress an ihrem Arbeitsplatz erfahren. Nutzen Sie bitte die Skala von 1 bis 10, wobei 1 gar keinen Stress bedeutet und 10 sehr viel Stress.

	1 (gar keinen Stress)	2	3	4	5	6	7	8	9	10 (sehr viel Stress)
38. Wie viel Stress erleben Sie allgemein durch Ihre Arbeit?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

39. In welchem Beruf sind Sie tätig?

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Vielen Dank für Ihre Teilnahme!

**Appendix B**

## Original Items for Each Scale followed by Results of Back-Forth Translation

Table B1

*Results of Back-Forth translation for the Scale of Role Ambiguity*

Original Item	Translation of Item
I feel secure about how much authority I have.	Ich fühle mich sicher in Bezug darauf, wie viel Autorität ich besitze.
Clear, planned goals and objectives exist for my job.	Eindeutige, geplante Zielsetzungen und Ziele existieren für meinen Beruf.
I know what my responsibilities are	Ich weiß, was meine Verantwortlichkeiten sind.
I know exactly what is expected of me.	Ich weiß genau, was von mir erwartet wird.
Explanation is clear of what has to be done.	Die Erklärung, was getan werden muss, ist eindeutig.

Table B2

*Results of Back-Forth translation for the Scale of Role Conflict*

Original Item	Translation of Item
I receive an assignment without the manpower to complete it.	Ich erhalte eine Aufgabe ohne die Arbeitskraft/Möglichkeit, sie zu bewerkstelligen.
I work with two or more groups who operate quite differently.	Ich arbeite mit zwei oder mehr Gruppen, die ziemlich unterschiedliche Arbeitsweisen haben.
I have to buck a rule or policy to carry out an assignment.	Ich muss eine Regel oder eine Richtlinie missachten, um eine Aufgabe auszuführen.
I receive incompatible requests from two or more people.	Ich erhalte nicht miteinander zu vereinbarende Forderungen von zwei oder mehr Menschen.

I do things that are apt to accepted by one person and not accepted by others.	Ich tue Dinge, die darauf gezielt sind, von einer Person akzeptiert zu werden, aber nicht von den Anderen akzeptiert werden.
I receive an assignment without adequate resources and materials to execute it.	Ich erhalte eine Aufgabe, ohne die angemessenen Hilfsmittel und Materialien, um sie auszuführen.

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Table B3

*Results of Back-Forth translation for the Scale of Job Satisfaction*

Original Item	Translation of Item
Your present job when you compare it to jobs in other organizations.	Ihr aktueller Beruf, wenn Sie ihn mit Berufen in anderen Organisationen vergleichen.
The progress you are making towards the goals you set for yourself in your present position.	Der Fortschritt den Sie machen, in Bezug auf Ihre Ziele, die Sie sich selbst für Ihre aktuelle Position stellen
The chances your job gives you to do what you are best at.	Die Chancen, die Ihr Beruf Ihnen gibt, um auszuüben, was Sie am besten können
Your present job when you consider the expectations you had when you took the job.	Ihr aktueller Beruf, wenn Sie die Erwartungen berücksichtigen, die Sie hatten, als Sie Ihren Beruf angenommen haben.
Your present job in light of your career expectations.	Ihr aktueller Beruf im Hinblick auf Ihre Karriereerwartungen.

Table B4

*Results of Back-Forth translation for the Scale of Job Crafting*

Scale	Original Item	Translation of Item
Task Crafting	Introduce new approaches to improve your work	Einführung neuer Vorgehensweisen, um Ihre Arbeit zu verbessern

	Change the scope or types of tasks that you complete at work	Änderung der Bereiche oder der Arten von Aufgaben, die Sie bei der Arbeit verrichten.
	Introduce new work tasks that better suit your skills or interests	Einführung neuer Arbeitsaufgaben, die besser zu Ihrem Geschick oder Ihren Interessen passen.
	Choose to take on additional tasks at work	Entscheidung, zusätzliche Aufgaben bei der Arbeit anzunehmen.
	Give preference to work tasks that suit your skills or interests	Bevorzugung zu Arbeitsaufgaben aufzeigen, die zu Ihrem Geschick oder Interessen passen.
	Changes the way you do your job to make it more enjoyable for yourself	Änderung der Art und Weise, wie Sie Ihren Beruf ausüben, um ihn für Sie selber erfreulicher zu gestalten.
	Change minor procedures that you think are not productive	Änderung kleinerer Prozesse, die Sie für unproduktiv halten.
Relational Crafting	Engage in network activities to establish more relationships	Teilnahme an Gemeinschaftsaktivitäten, um mehr Beziehungen aufzubauen.
	Make an effort to get to know people well at work	Sich Bemühen, Leute auf der Arbeit gut kennenzulernen.
	Organise or attend work related social functions	Organisation oder Besuch von arbeitsbezogenen

	gesellschaftlichen Veranstaltungen.
Organise special events in the workplace (e.g., celebrating a co-worker's birthday)	Organisation von speziellen Ereignissen an Ihrem Arbeitsplatz (z.B. das Feiern des Geburtstages eines Mitarbeiters).
Introduce yourself to co-workers, customers, or clients you have to met	Sich selber Mitarbeitern, Kunden oder Klienten vorstellen, die Sie kennen lernen müssen.
Choose to mentor new employees (officially or unofficially)	Entscheidung, neue Angestellten einzuweisen (offiziell oder inoffiziell).
Make friends with people at work who have similar skills or interests	Anfreunden mit Menschen auf der Arbeit, die ähnliche Fähigkeiten oder Interessen haben.

Table B5

*Results of Back-Forth translation for the Scale of Supervisor Support*

Original Item	Translation of Item
My supervisor or manager is responsive to my needs when I have family or personal business to take care of—for example, medical appointments, meeting with child's teacher, etc.	Mein Vorgesetzter oder Manager geht auf meine Bedürfnisse ein, wenn ich familiäre oder persönliche Angelegenheiten zu erledigen habe (zum Beispiel: ärztliche Absprachen, Treffen mit den Lehrern des Kindes, usw.).
My supervisor or manager is understanding when I talk about personal or family issues that affect my work.	Mein Vorgesetzter oder Manager zeigt Verständnis, wenn ich über persönliche oder familiäre Angelegenheiten spreche, die meine Arbeit beeinflussen.

I feel comfortable bringing up personal or family issues with my supervisor or manager.

My supervisor or manager really cares about the effects that work demands have on my personal and family life.

Ich fühle mich wohl, persönliche oder familiäre Angelegenheiten vor meinem Vorgesetzten oder Manager anzusprechen.

Mein Vorgesetzter oder Manager kümmert sich wirklich um die Auswirkungen, die die Arbeitsanforderungen an mein persönliches oder familiäres Leben aufweisen.

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**Appendix C**

## Actual- and Potential Range of Study Variables

Table C1

*Psychometric Properties of the Study Variables*

Variable	n	Range	
		Potential	Actual
Role Ambiguity	121	1.0-5.0	1.0-4.0
Role Conflict	121	1.0-5.0	1.0-4.0
Support Supervisor	121	1.0-4.0	1.0-4.0
Job Crafting	121	1.0-6.0	1.6-5.2
Job Satisfaction	121	1.0-4.0	1.0-4.0
Occupational Stress	121	1.0-10.0	1.0-10.0



**Appendix D**

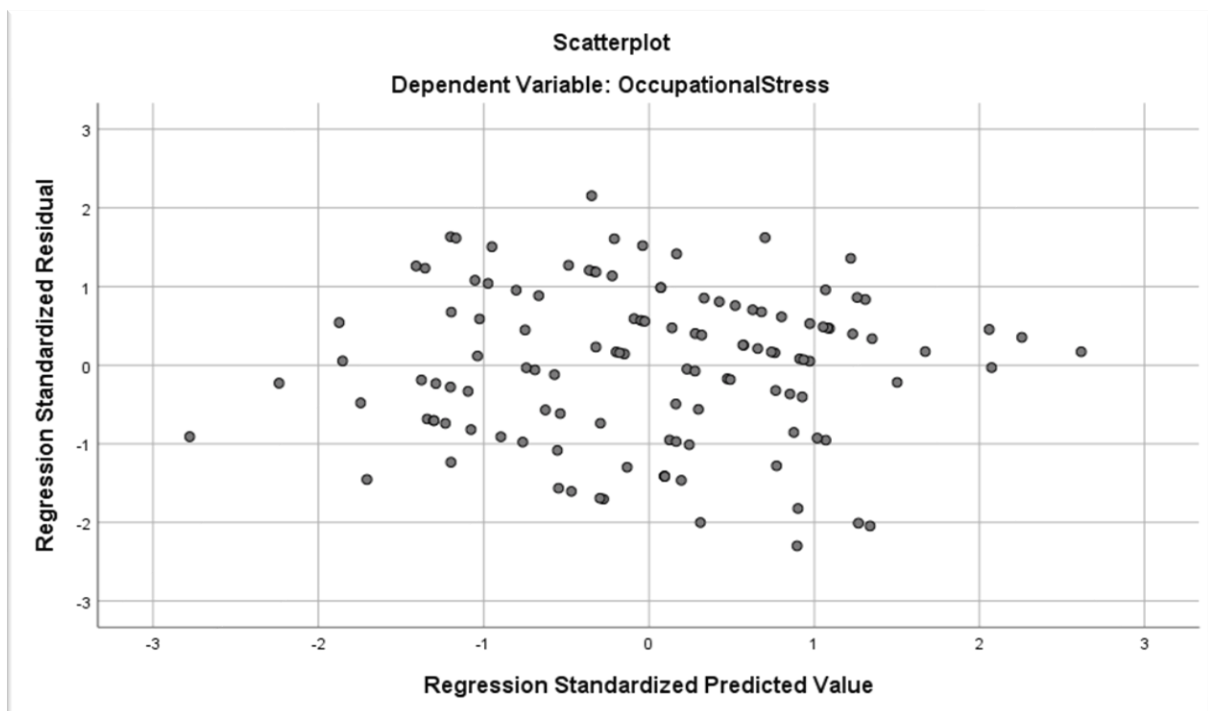
Assumption Testing of Multiple Regression Analysis

Table D1

*Collinearity Statistics for independent variables*

Variable	Collinearity Statistics	
	Tolerance	VIF
Role conflict	,713	1,401
Role ambiguity	,776	1,289
Supervisor support	,757	1,322
Job crafting	,742	1,348

*Note.* To fulfill the assumption of no multicollinearity, tolerance scores should be above 0.2 and VIF scores should be well below 10, which is the case for the displayed research variables.



*Figure D1.* Scatterplot for standardized values predict by the model for occupational stress, against the standardized values that were obtained for the prediction of occupational stress.

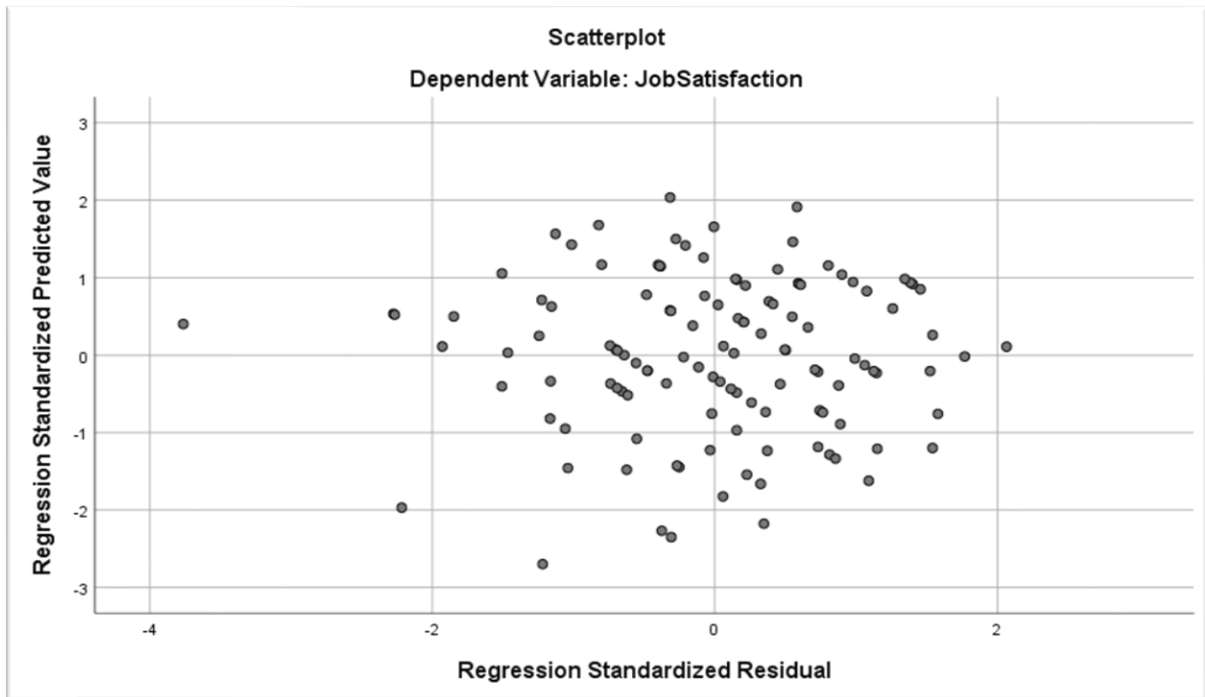


Figure D2. Scatterplot for standardized values predict by the model for job satisfaction, against the standardized values that were obtained for the prediction of job satisfaction.

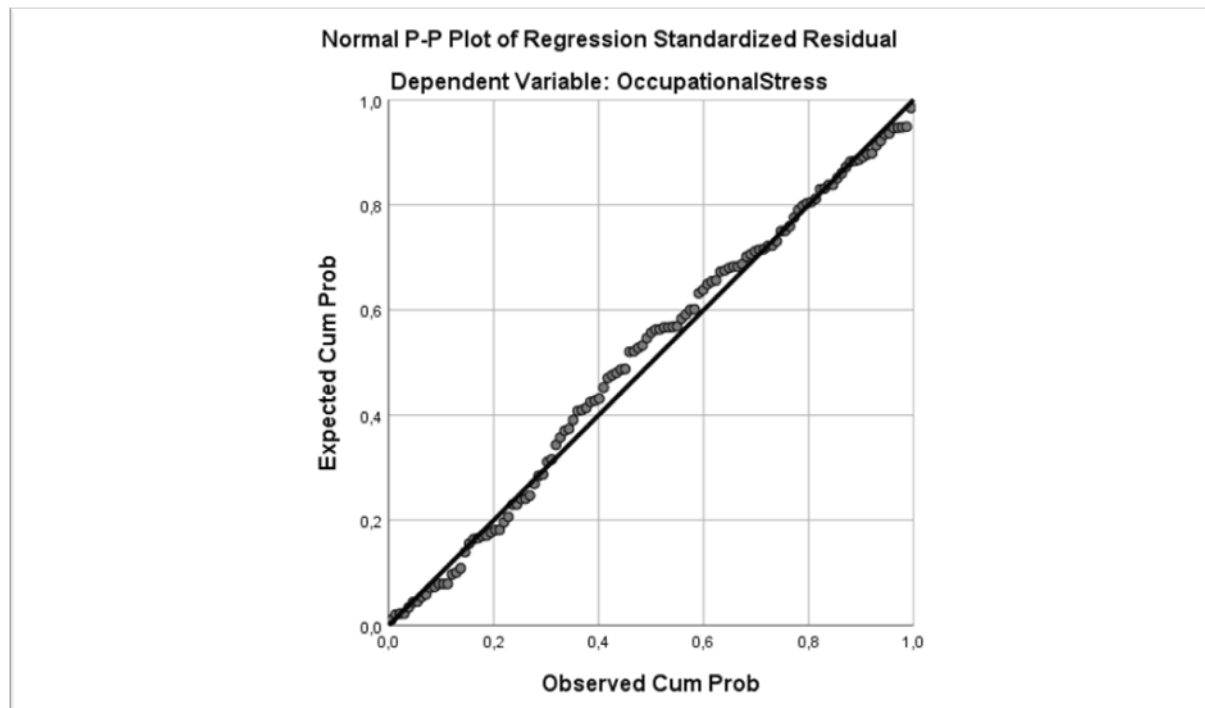
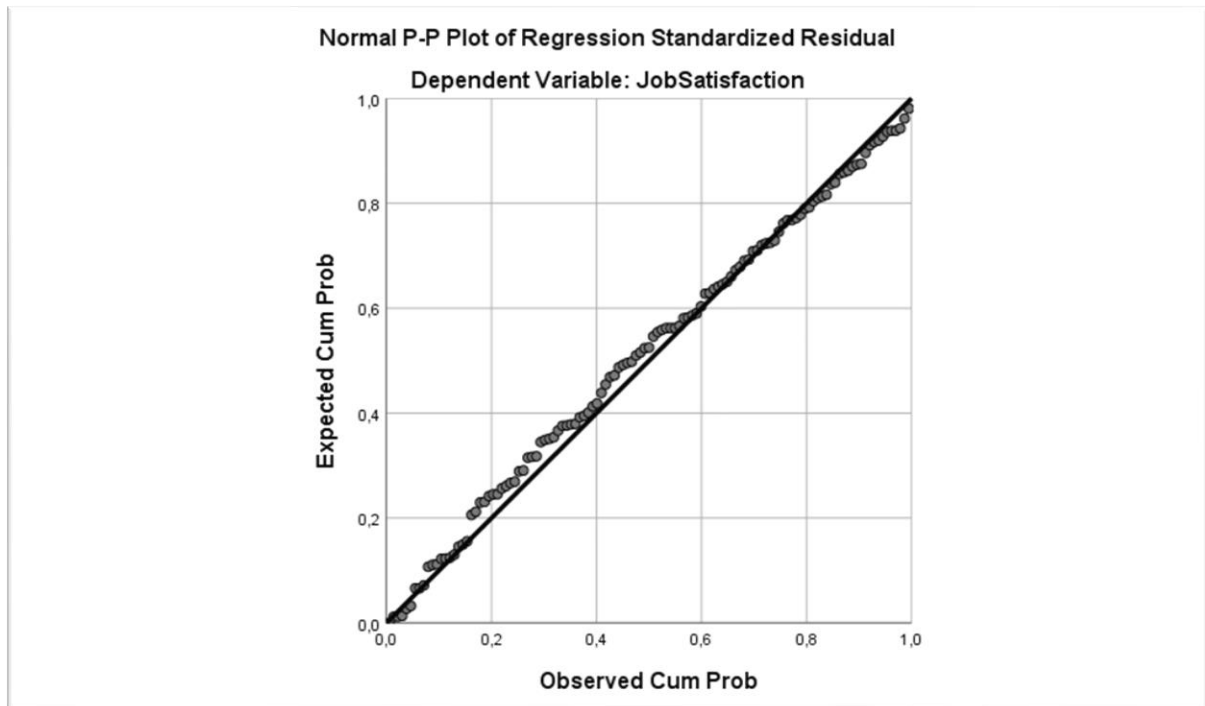


Figure D3. P-plot for the model of occupational stress. Normal distribution of residuals is indicated if data points lie close to the diagonal line.



*Figure D4.* P-plot for the model of job satisfaction. Normal distribution of residuals is indicated if data points lie close to the diagonal line.